

MATERIAL SAFETY DATA SHEET

SANYO Batteries

SANYO Energy
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In case of emergency contact:
CHEMTREC at (800) 424-9300

Date of Preparation: 6/23/03

Section I – Product Identification

Product Name: Lithium Ion Battery

Model: Cylindrical and Prismatic Type Cells

Chemical System: Lithium Ion

Designated for Recharge:

☒ Yes ☐ No

Section II – Hazardous Ingredients

IMPORTANT NOTE: The battery cell should not be opened or exposed to heat because exposure to the following ingredients contained within could be harmful under some circumstances.

Chemical Name	CAS No.	PEL	TLV
Lithium Cobaltate (LiC_0O_2)	12190-79-3	None Established	None Established
Graphite (C)	7782-42-5	2.5 mg/m ³ (as dust)	2.5 mg/m ³ (as dust)
Organic Solvent		None Established	None Established
Lithium Salt		None Established	None Established
Polyvinylidene difluoride (PVdF)	24937-79-9	None Established	None Established

Weight of lithium per cell: 0g

Section III – Physical Data

Specific Gravity: ($\text{H}_2\text{O}=1$):

Melting Point: (°C):

Appearance and Odor:

LiC_0O_2 : 4.95, Graphite: 2.09~2.2

LiC_0O_2 about 1130 °C

LiC_0O_2 is a black, odorless powder.

C is a black, odorless powder.

Organic solvent is a colorless or light yellow liquid.

Lithium salt is a white, crystalline and odorless powder.

The information and recommendations set forth are made in good faith and believed to be accurate as of the date of preparation. SANYO ENERGY CORP. makes no warranty, expressed or implied, with respect to this information and disclaims all liabilities from reliance on it.

Section IV — Fire and Explosion Hazard Data

Extinguishing Media:	Water
Flammable Limits:	Not available
Special Fire Fighting Procedure:	In case of fire in an adjacent area, use water, CO ₂ or dry chemical extinguishers if cells are packed in their original containers since the fuel of the fire is basically paper products. For bulk quantities of unpackaged cells use LITH-X (Graphite Base). In this case, do not use water.

Section V - Reactivity Data

Stability:	Stable
Conditions to Avoid:	Do not heat, disassemble or overcharge.
Hazardous Decomposition or By-products:	N/A
Hazardous polymerization will not occur.	

Section VI - Health Hazard Data

Routes of Entry:	Inhalation	Yes
	Skin	Yes
	Ingestion	Yes

Health Hazards (Acute and Chronic):

These chemicals are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused. The most likely risk is an acute exposure when the gas release vent works. Organic solvent has slight toxicity and can irritate skin and eyes. Lithium salt is irritating to skin, eyes and mucous membranes and should be avoided.

Carcinogenicity:

NTP: None IARC Monograph: None OSHA Regulated: None

Medical Conditions Generally Aggravated by Exposure:

An acute exposure will not generally aggravate any medical condition.

Emergency and First Aid Procedures:

In case of skin contact with contents of battery, flush immediately with water. For eye contact, flush with copious amounts of water for 15 minutes. Do not inhale leaked material. If irritation persists, get medical help.

Section VII - Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled:

The preferred response is to leave the area and allow the batteries to cool and the vapors to dissipate. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

Waste Disposal Method:

Dispose in accordance with appropriate regulations. Open cells should be treated as hazardous waste.

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Precautions to be Taken in Handling and Storing:

Avoid mechanical or electrical abuse.

Other Precautions:

Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

Section VIII - Control Measure

Respiratory Protection (Specify Type):	Not necessary under conditions of normal use.
Ventilation:	Not necessary under conditions of normal use.
Protective Gloves:	Not necessary under conditions of normal use.
Eye Protection:	Not necessary under conditions of normal use.
Other Protective Clothing or Equipment:	Not necessary under conditions of normal use.

Section IX - Recycling and Disposal

SANYO encourages battery recycling. Lithium ion batteries are safe for disposal in the normal municipal waste stream since they are not defined by the federal government as hazardous waste. However, lithium ion batteries are recyclable. For information contact Kinsbursky Brothers Inc. at (800)548-8797 or see their website at www.kinsbursky.com.

DO NOT INCINERATE or subject battery cells to temperatures in excess of 212°F. Such treatment can cause cell rupture.

Section X - Transportation

Sanyo sealed Lithium Ion batteries comply with all applicable shipping regulations as prescribed by industry and legal standards which includes compliance with the UN Recommendations on the Transport of Dangerous Goods; IATA Dangerous Goods Regulations, 44th Edition, 2003, Special Provisions A45, and applicable U.S. DOT regulations for the safe transport of Lithium Ion batteries. Each Sanyo cell or battery has been tested under provisions of the UN Manual of Tests and Criteria, Part III, Sub-section 38.3. More information concerning shipping, testing, marking and packaging can be obtained from Labelmaster at <http://www.labelmaster.com>.

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